Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of segmenting a radiographic image into diagnostically relevant and diagnostically irrelevant regions comprising:

acquiring a digital radiographic image including a matrix of rows and columns of pixels;

generating an initial background map using an ~~detecting the~~ initial background left point ~~of a histogram of said image~~;

detecting ~~the~~ a foreground map of said image using the initial background map ~~left point~~;

regenerating ~~the~~ a regenerated background map of said image;

validating the regenerated background map of said image;

merging the regenerated background map and foreground map ~~regions~~ of said image as diagnostically irrelevant regions; and

extracting ~~the~~ an anatomy map ~~region~~ of said image as the diagnostically relevant region.

2. (Original) The method of claim 1 wherein said acquiring a digital radiographic image includes acquiring a digital radiographic image from one of the following:

a diagnostic imaging device, a direct digital radiography or computer radiography device, and x-ray film digitizer, a digital radiographic image archive.

3. (Currently Amended) The method of claim 1 ~~wherein said~~ further comprising the step of detecting the initial background left point comprising ~~includes~~:

evaluating each row and column of image pixels for all rising and falling transitions for all candidate backgrounds to foreground (BF) and

background to skinline (BS) transitions and record the transition range, transition width, the maximum transition slope and the transition high point;

building transition range cumulative histogram and auto-selecting new transition range threshold;

building a transition high point histogram and find a first estimate of a background left point;

iteratively fine tuning the background left point; and

verifying the background left point.

4. (Currently Amended) The method of claim 1 wherein said detecting the foreground map includes:

providing as inputs said acquired digital radiographic image and said initial background left point;

using a smart edge detection process to classify all significant transitions in said image;

conducting a Hough Transform to delineate all the lines that are possible collimation blades;

finding candidate partition blade pairs if said image has several radiation fields;

lining a divide-and-conquer process to partition said image into sub-images containing only one radiation field; and

identifying the best collimation for each sub-image to detect the foreground map.

5. (Currently Amended) The method of claim 1 wherein said regenerating the regenerated background map uses a region growing method from a set of known "seed" background pixels based on the initial background left point or a transition pixel.

6. (Currently Amended) The method of claim 1 wherein said validating said regenerated background map includes determining whether ~~the~~ a ratio between the regenerated background map ~~region~~ and all the non-foreground map ~~region~~ exceeds a certain threshold and whether the dynamic range of all the

non-foreground map ~~region~~ is greater than a minimum threshold and if one or both are not then the regenerated background map ~~detected~~ is invalid.

7. (Currently Amended) The method of claim 1 wherein said merging the background and foreground maps ~~regions~~ of said image includes removing any transition gaps between said maps ~~regions~~.

8. (Currently Amended) The method of claim 1 wherein said extracting the anatomy map ~~region~~ is carried out by subtracting the merged foreground and background maps ~~regions~~ from said acquired image.

9. (Currently Amended) The method of claim 8 wherein extracting the anatomy map ~~region~~ is followed by a refining process using image labeling to identify a plurality of largest connected regions as the anatomy maps ~~regions~~.

10. (Currently Amended) The method of claim 11 wherein iteratively fine tuning the background left point uses either major peak or major background or both as features for selecting different thresholds in order to control the iteration.

11. (Previously Presented) A method of segmenting a radiographic image into diagnostically relevant and diagnostically irrelevant regions comprising:

acquiring a digital radiographic image including a matrix of rows and columns of pixels;

detecting the initial background left point of a histogram of said image;

detecting the foreground of said image;

regenerating the background of said image by region growing;

validating the background of said image;

merging the background and foreground regions of said image as diagnostically irrelevant regions; and

extracting the anatomy region of said image as the diagnostically relevant region;

wherein said detecting the initial background left point includes:

evaluating each row and column of image pixels for all rising and falling transitions for all candidate backgrounds to foreground (BF) and background to skinline (BS) transitions and record the transition range, transition width, the maximum transition slope and the transition high point;

building transition range cumulative histogram and auto-selecting new transition range threshold;

building a transition high point histogram and find a first estimate of a background left point;

iteratively fine tuning the background left point; and

verifying the background left point.

12. (Currently Amended) The method of claim 1, wherein said regenerating the regenerated background map of said image is accomplished by region growing.